



**THE ELECTRONIC INFORMATION SHARING
INFLUENCE FACTORS THAT AFFECT THE
PARTICIPANT BEHAVIOR OF THE SECONDARY
SCHOOL TEACHERS IN HULU LANGAT DISTRICT**

MOHD TAMRI BIN HJ. ABD HALIM

**MASTER OF COMPUTER SCIENCE
(INTERNETWORKING TECHNOLOGY)**

2017



Faculty of Information and Communication Technology

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Mohd Tamri Bin Hj. Abd Halim

**A dissertation submitted in fulfilment of the requirements for the degree of
Master of Computer Science (Internetworking Technology)**

Faculty of Information and Communication Technology

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2017

DECLARATION

I declare that this thesis entitle

**“THE ELECTRONIC INFORMATION SHARING INFLUENCE FACTORS THAT
AFFECT THE PARTICIPANT BEHAVIOR OF THE TEACHERS IN SECONDARY
SCHOOL IN HULU LANGAT DISTRICT”**

is the result of my own research except as cited in the references. The thesis has not been accepted for any degree and is not concurrently submitted in candidature of any other degree.

Signature :

Name : Mohd Tamri Bin Hj. Abd Halim

Date :

APPROVAL

I hereby declare that I have read this project and in my opinion this project is sufficient in terms of scope and quality as a partial fulfillment of Master of Computer Science (Internetworking Technology).

Signature :

Name : Associate Professor Dr. Asmala Bin Ahmad

Date :

DEDICATION

I dedicate my grateful projectwork to all my beloved family members:

Parents : Allahyarham Hj. Abd Halim bin Abd Rahman (late father), Hajah Zainun Bt Omar (mother), Wan Hassan Bin Wan Setapa (father in law), Jizah Bt Daud (mother in law)

Wife: Wan Rosnani Bt Wan Hassan

Daughters: Nurliyana Ismahani, Nur Faihanah Uzma, Nur Fajriyah Ayuni and Nur Khaliesah Qistina.

Sisters: Zarida, Sharizai.

I love all of u.

ABSTRACT

This case study aimed to identify the capabilities of the electronic information sharing among the teachers of the secondary school in the Hulu Langat District. Electronic information sharing refers to the use of information and communication technology to share the information electronically among the teachers. In addition, this practice among the teachers may possibly reduce cost of sharing information and help policy makers to make better decisions. Therefore, the objectives of this case study are to investigate the barrier and factors that influence the teachers while sharing information electronically in this district. This study used method of quantitative research in order to archive these objectives. Initially, questionnaires have been distributed among the teachers in different secondary schools in Hulu Langat were selected as the respondents for the study. A total of 97 questionnaires been distributed to the respondents to answer a questionnaire. The proposed questionnaire is a modification of the questionnaire which was obtained by previous studies. The research conducted in the form of descriptive analysis study was made using SPSS software and is presented in terms of frequency, percentage, factors analysis, correlation between dependent and independent variables. The findings of the study, will give the guideline for the Hulu Langat District to use the electronic information sharing with the teachers in future.

ABSTRAK

Kajian kes ini bertujuan untuk mengenalpasti sejauh mana perkongsian maklumat elektronik dikalangan guru-guru sekolah menengah di Daerah Hulu Langat. Perkongsian maklumat elektronik merujuk kepada penggunaan teknologi maklumat dan komunikasi untuk berkongsi maklumat sesama guru. Perkongsian maklumat elektronik mempunyai potensi untuk membantu guru-guru dalam memperbaiki mutu perkhidmatan mereka. Tambahan pula, amalan ini berkemungkinan berupaya mengurangkan kos perkongsian maklumat dan membantu pembuat polisi untuk membuat keputusan yang lebih baik. Oleh itu, objektif kajian kes ini adalah untuk menyiasat kekangan-kekangan dan faktor-faktor yang mempengaruhi kelakuan guru-guru di dalam daerah ini. Kajian kes ini menggunakan pendekatan kuantitatif dalam usaha untuk mencapai objektif berkenaan. Bagi tujuan tersebut, guru dari sekolah menengah yang berlainan di Daerah Hulu Langat telah di pilih sebagai responden kajian. Sejumlah 97 soalan soal selidik telah diberikan kepada responden untuk menjawab soalan. Soalan ini telah diubahsuai yang diperolehi dari kajian yang lepas. Analisis data adalah berdasarkan kepada analisis deskriptif yang dilakukan menggunakan perisian SPSS dalam bentuk frekuensi, peratus, analisis faktor, korelasi antara pembolehubah bersandar dan tak bersandar. Dapatan kajian, akan menjadi panduan kepada Pejabat Pendidikan Daerah Hulu Langat untuk menggunakan perkongsiaan maklumat elektronik dengan guru-guru pada masa hadapan.

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CHAPTER 1

INTRODUCTION

1.1 Background of the study

United Nations Educational, Scientific and Cultural Organization (UNESCO, 2003) reported that Malaysia aimed and targeted for more than 12 million Malaysians to be able to use the ICT in 2015. The surge in the development of Information and Communication Technology (ICT) in the past 20 years has had global influence on the lives of people in general and the nature of jobs in different fields. The Malaysian Ministry of Education's (MOE) policy caters for the integration of ICT in school because of the need for the workforce in the 21st century. Because more and more workplaces began to utilise ICT, it was very crucial that the generation of students at the beginning of this decade to be well equipped with the knowledge and skills in ICT. This was to ensure that the new generation of workers were ready to face the tasks in the working field. This trend is still ongoing because the ICT is the way of life for the majority of the people and it is imperative that we are well-prepared to live in the challenging world of ICT into the future.

Simultaneously, Malaysia has developed a initiative called the VISION 2020 with the objective of embracing the knowledge economy in order to remain and continue to be globally competitive. In its preparedness to remain competitive in this globalized world, Malaysia needs to continue developing the knowledge of its teachers and encourage them to

use ICT in school. The Ministry of Education (MOE) in Malaysia had recommended the minimum ICT skills that teachers need to possess in order for them to lead Malaysian students to strive for the competitiveness edge that enables them to compete in the ever-changing global economy. It is no secret that the countries that are able offer high skilled workforce knowledgeable in ICT would be able to attract a larger amount of potential investment.

The Ministry of Education has the capability of preparing the teachers equipped with the knowledge of ICT that will enhance the quality of teaching in the school. Furthermore, in order to integrate the use and promote information sharing via ICT, teachers must have the required skills to fulfil the tasks given to them. Due to this phenomenon, there was a need for new insights into the development of ICT skills amongst teachers Malaysia, resulting in many studies being conducted to assess the level of ICT integration in the classroom (Paryono and Quito, 2010; Sukri, 2010; Mahmud and Ismail, 2010; Ngah and Masood, 2006; Wahab and Kaur, 2006; Mustapha, 2000; Bakar and Mohamad, 1998).

Among the findings of the studies, it was found that the level of ICT integration was low or moderate. As for the integration of ICT into the classrooms, it is found that it is a dynamic process wherein the success of an integration depended upon the connecting of various factors such as teachers' skills, experience with ICT, age of teacher, year of service, level of qualification, type of training, computer and peripheral available in schools, and the administration support. The assessments of the basic knowledge and skill in ICT amongst the teachers were carried out with the presumption that all the teachers of any subject will need to acquire ICT skills. According to the Malaysian education policy and the current situation, the level of ICT integration and electronic information sharing among the teachers are

important and makes reference to information sharing that happen by communication and computing technologies (Akbulut, 2011).

The endeavour towards creating an information rich society and subsequently achieving the above mission, vision and objective should rightfully start in the schools. A greater effort would need to be taken towards instilling the learning culture in our society, which includes the ability of *learning to learn* and *lifelong learning*. Consequently, this would address the normal problem faced by any society in acquiring new knowledge, which is being too dependent and only possessing the knowledge that is fed to them. By having the skills to acquire knowledge independently, the society would have developed the crucial skills and ability to face the changing times (Halimah, 2006). Malaysia, in its ongoing effort to reduce the digital divide among the young population, has taken the necessary steps through the Ministry of Education to increase the knowledge and skills in information communication technology (ICT) literacy.

Among the steps taken by the Malaysian Government is the introduction of personal computers and knowledge in ICT at an early stage a student's education. This part of the school curriculum creates the opportunity for young children to effectively harness and utilise the skills in electronic information sharing.

Electronic information sharing can be achieved through the use of validated IT solutions including the use of web portals data warehouses and middleware applications. The practice of electronic information sharing is good and useful in term of reducing time, effort and cost involved. Electronic information sharing tools are used to share information between the teachers in the same or different school, between teachers and the District Education Office, between DEOs or also sharing of information between those in the same field.

1.2 The Benefit Of Electronic Information Sharing In School

The application of ICT through electronic information sharing provides the opportunity to change the education system from conventional learning and examination oriented culture to an electronic learning system or *e-learning*. The utilisation of ICT as a tool that facilitates teaching and learning should cover and encompass a wider area that includes all levels of education and regions (Halimah, 2006).

In the effort of preparing the children for the information age, the school management and teaching-learning practices periodically undergo systematic reinventions that duly define the teachers' activities in school (Smart School Flagship Application Blueprint, p.20). The teachers are able to practice the electronic information sharing daily when they communicate. In order to guarantee the success of the teachers' task in sharing information, the resources of ICT in school needs to be managed effectively and efficiently.

The Ministry of Education is prepared the fully utilise the ICT system that the teacher can use in the school to achieve their objectives. According to Dawes, there are three categories in the classification of the benefits of electronic information sharing and integration: political, organisation and technical (Karla Mendes Calo et al., 2014). This useful benefit is to:

- i. organisation that is related to the improvement and solutions in its capabilities and the solution for problems in wide-organisations;
 - ii. technical entities that's related to inform management and data processing; and
 - iii. political entities that are related to enhance general public image or public value that has been developed for electronic information sharing projects.
- Furthermore, it is beneficial to attaining a far-reaching public information, integrated planning and an improved service delivery among others.

1.3 Investment in Information and Communication Technology (ICT)

Among the initiatives employed by the Ministry of Education (MOE) is to cater for the needs of the teachers that is focused on technology in education today which has resulted in substantial financial investment being made in ICT. That is the best step in school as well to prepare the development of intellectual teachers as a human capital in our country.

Malaysia is going through a transformation of creating a highly knowledgeable society with better ICT skills. This is highlighted by the development of ICT in Malaysia vis-à-vis the development of human capital (Halimah, 2006). The Malaysian MOE had greatly emphasised on the utilisation of ICT in implementing policies and programmes, including its need to employ this process as a mean in the creation of new technologies.

In line with Malaysian effort to become a developed nation and in reaching the objectives of Vision 2020, Datuk Seri Abdullah Ahmad Badawi, the former Prime Minister formulated the Ninth Malaysia Plan (9MP, 2006 - 2010). This five-year development plan was crucial because it was at the midway stage of realising Malaysia's dreams as mentioned above. This formula provided focus in the development of the country's growth resources, including the bridging of the economic split between the regions and the different communities as well as the addressing the problem of poverty in general.

Malaysian Ministry of Education (MOE) initiated and launched the 1BestariNet project. Under the initiative, YTL Communications was awarded the responsibility to assist the government in carrying out the project. There are 10,000 primary and secondary public schools in our country that will be equipped with high-speed 4G Internet access and a virtual learning platform, translating into access to a world-class Integrated Learning Solution via a high-speed Internet connectivity. The stakeholders would be able to access it in schools from anywhere within the school compound with an internet connection (Yes 4G Internet).

Inclusive in the project is the installation of an integrated solution in the schools. This solution is based on the Internet, called the Internet-based Virtual Learning Environment (Frog VLE), will benefit the stakeholders in the area of teaching and learning. It will also assist them in collaboration and other administrative functions. Teachers, parents and students will be able to participate in various virtual activities that will include lessons and administering of online tests. Parents will be able to check on their children homework and marks and also communicate with the schools from their home. The administration of a school will be able to put up the school calendars and notices on activities in school. It is an all-in-one solution comprising an Intranet, an online classroom, and a social space for schools replicating the real world learning by integrating the virtual equivalents of the conventional education.

Moreover, the Frog VLE is integrated with other powerful educational tools and content partners, including Google Apps for Education and the Khan Academy, to take teaching and learning further. FrogAsia, as the solution provider of the Frog VLE, works hand-in-hand with local educators and education organisations to deliver a world-class learning system that is relevant to the current Malaysia education system. Beyond this technological application, importance is also given in the handling of Frog. This is useful to increase the teachers' skills and understanding in sharing the electronic information in school as a whole.

1.4 Problem Statement

The effort to introduce technology by providing the hardware, software and technical expertise to all schools as quickly as possible by the Malaysian Ministry Of Educations was deemed as an expensive venture (Musa, 2006). Obviously, teachers need to share the information because it is the main resources. This is crucial in making their decisions to complete the task given.

Akbulut (2011) highlighted that the need of electronic information sharing (EIS) among the educational field increases from year to year. It shows that the electronic information sharing is necessary within the same organisation or with others. However, there are many challenges facing the practice of electronic information sharing among the teachers such as the poor information and support of the electronic data sharing activities (Flavia Kyeyago Ouma, 2014). In order to have an efficient and suitable practice of electronic information sharing, a timely action from the ministry is required to overcome the array of challenges and problems.

In addition, the DEO must also employ programmes to encourage the teachers to employ electronic information sharing with the focus on the accessibility and the effective use of electronic information sources (Teh, 2008).

As such, the researcher will identify the impact of behavioural factors on technology project (Boehm, 1987). Moreover, according to (Gil-Garcia et al., 2010), electronic information sharing (EIS) is a complex socio-technical phenomenon. EIS covers both technical and social aspects. Along a similar line in school, the human behaviour brings about a significant influence on electronic information sharing inside the public sectors (Dawes, 1996; Zhang, Dawes, 2006; Gil-Garcia et al., 2007; Pardo, Tayi, 2007).

In the schools context, there arises the need to research the human factors in the study of electronic information sharing (Bigdeli, 2012). In addition, the studies on investigating the electronic information sharing in government sectors has been decreased (Yang et al., 2014). This research aims to investigate the behaviour of the electronic information sharing among the teachers in Hulu Langat District.

1.5 Research Objectives

The main objectives of the study are:

- i. To identify the barrier of electronic information sharing that affects the participation behaviour of teachers for the digital era in schools.
- ii. To highlight the electronic information sharing factors that affects the participation behaviour of teachers for the digital era in schools.
- iii. To evaluate the electronic information sharing factors that affects the participation behaviour of teachers for the digital era in schools.

1.6 Research Questions

The research questions used to guide and achieve the aim and objectives of this study are:

- i. What is the barrier of electronic information sharing that affects the participation behaviour of teachers for the digital era in schools?
- ii. What are the electronic information sharing factors that affect the participation behaviour of teachers for the digital era in schools?
- iii. How to examine the electronic information sharing factors that affects the participation behaviour of teachers for the digital era in schools?

1.7 Significance of the Study

This study offers important information to the Hulu Langat District Education Office (DEO) on the impact of the use of electronic information sharing in the education field. The information obtained from this study would be useful for the Hulu Langat District to perceive how the “multi-million investments” would be utilised to encourage teachers to use the electronic information sharing in schools.

This study aims to explore the level of usage and the impact of electronic information sharing, and intends to identify the electronic information sharing among teachers in the digital era. Furthermore, this study attempts to find out the barriers, if any, in using the electronic information sharing within the activity of sharing information in this district.

Specifically, this study of electronic information sharing has three significant reasons for educational purposes:

- i. The computer literacy was introduced in 1994 into the teachers' training program to ensure confidence in using the ICT. Subsequently, the Ministry of Education (MOE), in its effort to advance towards achieving a knowledgeable society, essentially continued to facilitate the structural changes needed to develop tertiary education both in public and private sectors. Most of the training focused on teachers attending workshops on how to use software albeit the common understanding of how the use of the ICT could be translated into a faster and better achievement of the objectives of their tasks. This study helps to provide an insight on the current status of the practice of information sharing among the teachers in the Hulu Langat District after attending the computer training organized by the Ministry of Education.
- ii. Due to the high cost of ICT development, the MOE needs to wisely utilise and manage the allocated resources, including the expenses and manpower. The MOE has played an active part in the development for the teachers through the provision of resources, guidance and information in line with our country's vision. The MOE has already supplied many types of electronic information resources to all schools in different forms such as mobile phone, E-mail, CD or DVD, fax machine and educational television. Nevertheless, the teachers in the